CLASS VI INJECTION WELL TESTING

INJECTION WELL 357-7R
40 CFR 146.82(c)(4),(7) and 146.87(e)

ELK HILLS A1-A2 PROJECT

Well 357-7R Injection

The 357-7R injection well is being repurposed for the Elk Hills A1-A2 project. Injection was approved by California Geologic Energy Management (CalGEM) for Class II gas injection for pressure maintenance. Since 2011 3.5 billion cubic feet of gas has been injected in well 357-7R (Figure 1), with CO_2 composition as high as 44%. The maximum rate of injection for the 357-7R well since 2011 is 6.5 million cubic feet per day.

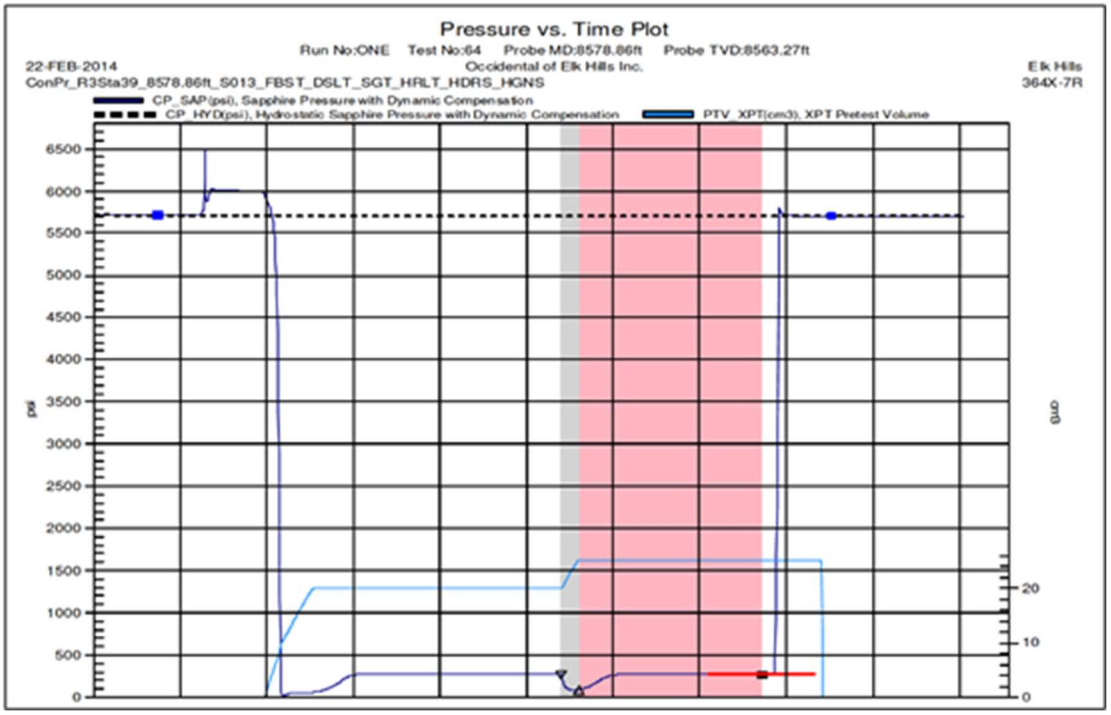
Gas injection for the purpose of supporting Monterey Formation A1-A2 reservoir pressure initiated in 1982. Cumulative gas injection is 175 billion cubic feet, with individual well injection rates as high as 30 million cubic feet per day.

Figure 1: 357-7R gas injection rate.

Pressure Build-Up Test

Below (Figure 2) is an example build-up test from well 364X-7R taken at 8578.86 feet measured depth in the Monterey Formation A1-A2 reservoir.

Figure 2: Pressure build-up test for the Monterey Formation A1-A2 reservoir in well 364X-7R.


Pressure vs. Time Plot
Run No:ONE Test No:64 Probe MD:8578.86ft Probe TVD:8563.27ft
22-FEB-2014
Occidental of Elk Hills Inc.
Elk Hills
364X-7R
ConPr_R3Sta39_8578.86ft_S013_FBST_DSLT_SGT_HRLT_HDRS_HGNS
CP_SAP(psi), Sapphire Pressure with Dynamic Compensation
CP_HYD(psi), Hydrostatic Sapphire Pressure with Dynamic Compensation
PTV_XPT(cm3), XPT Pretest Volume
psi
cm3
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
20
10
0